

Application No. Not Yet Assigned  
Amendment dated September 30, 2005  
First Preliminary Amendment

Docket No.: 21854-00064-US1  
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**AMENDMENTS TO THE ABSTRACT**

Please substitute the attached Abstract of the Disclosure for the abstract now appearing in the currently filed specification:

### **ABSTRACT OF THE DISCLOSURE**

A method for determining chemical oxygen demand of a water sample comprises the steps of (a) applying a constant potential bias to a photoelectrochemical cell, having a photoactive working electrode (e.g. a layer of titanium dioxide nanoparticles coated on an inert conductive substrate) and a counter electrode, and containing a supporting electrolyte solution; (b) illuminating the working electrode with a light source and recording the background photocurrent produced at the working electrode from the supporting electrolyte solution; (c) adding a water sample, to be analyzed, to the photoelectrochemical cell; (d) illuminating the working electrode with a light source and recording the total photoelectrocurrent produced with the sample; (e) determining the chemical oxygen demand according to the type (exhaustive or non-exhaustive) of degradation conditions employed.